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ABSTRACT

Primarily designed to increase the use of the microcomputer in the classroom as a supplement to instruction, this practicum also provided training for teachers in grades 4 through 6 and their principal in a setting which was intended to be functional and nonthreatening to the participants. The 10 participating teachers were given a pre-self-evaluation checklist, and then were trained in computer software and hardware use. In addition, a software catalog was established together with a process to requisition software. Data were collected via pre- and post-evaluation checklists and a tally of the software requisitioned by the study participants. Analyses of these data showed that the behavioral expectations of the practicum had been met, as the teachers and the principal demonstrated an understanding of how to work with a personal computer, a procedure for distributing computers and software was used by the teachers and the principal, and the teachers and the principal became aware of the software that is available in their building. Supporting materials, copies of the two checklists, and the survey results are presented in 21 appendixes, and 20 references are provided. (EW)

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Improving the Consistency In Which Teachers of Grades Fourth Through Sixth Use Microcomputers to Assist Instruction

by

Lorraine G. Vitchoff
Cluster XXVI A

A Practicum I Report Presented to the Ed. D. Program
In Early and Middle Childhood
In Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Nova University

1988

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PRACTICUM APPROVAL SHEET

This practicum took place as described.

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This practicum report was submitted by Lorraine G. Vitchoff under the direction of the advisor listed below. It was submitted to the Ed.D. Program in Early and Middle Childhood and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova University.

Approved:

7/1/88
Date of Final Aprroval of Report

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ABSTRACT

Improving the Consistency in Which Teachers of Grades Fourth Through Sixth Use Microcomputers to Supplement Instruction. Vitchoff, Lorraine G., 1988:Practicum Report, Nova University, Ed.D. Program in Early and Middle Childhood. Descriptors: Computer Assisted Instruction/Staff Development/Microcomputers/Computer Managed Instruction/Elementary Education/Teacher Training/Computer Aided Learning

This practicum was designed to increase the use of the microcomputer in the classroom as a tool to supplement instruction. The primary goal was to increase the use of microcomputers in the classroom. The peripheral goal was to provide a training setting which was functional and nonthreatening to teachers.

The writer began the implementation by administering a pre self-evaluation checklist to attain a pre and post-concept of the teachers' attitudes and knowledge of computer use in the classroom. Teachers were trained on the use of hardware and software. A software catalog was established along with a process to requisition software.

The results of the practicum were positive. Analysis of the data revealed that 10 of the 10 participants met the behavioral expectations. The objectives were: (1) The teachers in grades fourth through sixth and the principal will demonstrate an understanding of how to work a personal computer, (2) A procedure for distributing computers and software will be used by the teachers and principal, (3) The teachers of grades 4 through 6 and principal will have knowledge of the software that is available in their building.

CHAPTER I

INTRODUCTION

Description of Community

The city in which this practicum took place is located on the northeastern seaboard of the United States. Its present population is approximately 40,000. Up until 1976 the city's primary source of revenue was from summer tourism and convention business throughout the year. Presently, the primary source is from the casino gaming industry.

Ten years ago the socioeconomic makeup was predominately middle class families. This group has since moved out of the area or is sending their children to parochial or private schools. The majority of the city's residents and student population is now of the lower-middle to lower socioeconomic background.

Writer's Work Setting and Role

The school district has nine elementary schools, two junior high schools, and one high school. Its total student population is appproximately 6,300. The high school population is comprised of students from the city and three small sending districts.

The district's elected board of education works closely with the district superintendent setting standards and policies for the local educational system. These standards

and policies are implemented by the administrative and teaching staff of the district.

The school in which the practicum took place is one of the nine elementary schools in the public school district. It is located in a predominately Hispanic xcommunity. The student population has been decreasing in the last 3 years due to the lack of city housing and the transiant nature of family employment. The present student population of the school is 343. The ethnic makeup is 246 Hispanic, 81 Black, 1 Asian and 15 Caucasion. The teacher population is 24, broken down to 6 Hispanic, 7 Black, and 11 Caucasian.

The writer has been employed by the public school district for 11 years. The first 3 years were in the capacity of classroom teacher and the following 3 years as a specialist teacher in the areas of chapter one, compensatory education, academically gifted, and English as a Second Language. During this period of teaching, the writer also served as the unit leader for the first grade classroom teachers and the building representative for the implementation of the state department of education's plan of action. Presently, the writer is serving in her fifth year as an administrator in the role of coordinator of the computer assisted instruction and the intellectually gifted programs. This practicum was addressed from the standpoint of the writer's role as coordinator of computer assisted instruction.

The coordinator of computer assisted instruction services all elementary and junior high schools as a member of the central administrative staff. The general functions of this position are the development, implementation, and monitoring of the use of the computer as a supplemental tool to instruction.

The writer was appointed by the state department to serve on the commissioner of education's advisory council for educational technology. Other activities related to education in which the writer is involved are on-going curriculum and policy planning in the local district and speaker/presentor at local, county, and state conferences.

The writer's educational background includes a bachelor's degree in early childhood education and a master's degree in educational supervision and administration. She is certified by the department of education in elementary and junior high along with holding a principal/supervisor certificate.

CHAPTER II

STUDY OF THE PROBLEM

Problem Description

The school in which the practicum took place had not been using computers to supplement instruction. Two years ago the district purchased microcomputers and instructional software to be used as a means to provide diverse teaching stategies and to develop the students appreciation of the computer as a source of information and as a learning tool. A 2 hour training session covering how to use the computer and a brief introduction to available software was provided. The training was required for the teachers of grades 4 through 6 because the superintendent felt this was where the priority should be placed for computer use. Suggestions and guidelines for the process of incorporating this new media into the classroom were also furnished. However, the use of computers was entirely up to the individual teacher or building principal.

The writer recognized that the staff and students were interested in using the computer. Contrary to this interest, much of the software had never been opened and the majority of the computers were locked up in a storage area.

The recognition of this state of affairs came about as a result of the writer's observations during building visitations and discussions with the building principal, the

staff person for computer assisted instruction , and several classroom teachers.

Given the number of computers in the building and software available, the ideal situation would have been as follows:

1. The computers would be equally distributed and assigned to specific classrooms throughout the building.

Schedules of the day, time and location of the computer would be established and adhered to.

2. Documentation would reflect the use of software.

a. A catalog of software and its contents would be available.

b. A process for the circulation of software would be in place.

In summary, the problem was that there was a lack of consistency in which the teachers of grades 4 through 6 used the computer for supplemental instruction. This inconsistency was evident in that schedules were not available, lesson plans did not reflect computer use, and the staff had requested assistance.

Problem Documentation

Documentation of the problem was obtained in varied forms. These forms include:

1. the writer's observations during periodic visitations (documented in visitation log);

2. conferences with the building principal and staff person for computer assisted instruction;

3. informal survey of classroom teachers;

4. results of software and hardware inventory;

5. faculty survey (see Appendix A)

While visiting the school on several different occasions, the writer observed that several computers were in a storage room during the instructional day and there was a lack of computer distribution documentation and schedule. Classroom visitations showed few signs of computer use. Three specific log entries from building visitations were:

Wednesday, January 14, 1987 - Nine of the 10 computers purchased for this building were in a storage area.

Tuesday, March 10, 1987 - All computers were in the storage area. The principal stated that he would like the computers to be used because the students are very interested in them.

Friday, April 10, 1987 - Eight of the 10 computers were in the storage area.

Concerns were expressed by the building principal and computer assisted instruction staff person during conferences. These concerns were in the areas of scheduling of computer use and teacher confidence in the workings of the computer. The principal, himself, requested additional training (see Appendix B).

Informal surveys of classroom teachers showed interest in the computer as a motivational tool; however, the attitudes towards realistically incorporating the use of the computer and software lessons into their day was that the idea was overwhelming. Some of the reasons for not using the computer were the limited number of computers, being unfamiliar with the software, and not having any time to preview it and not enough time to "teach" computers.

The end of the year (school year) inventory of software brought to light the fact that some software packages were never opened. Much of the software had been delivered in September of the school year in which the inventory took place.

A formal survey was distributed to all classroom teachers of grades 1 through 6 requesting them to answer the questions as they applied to their classroom situation. Twenty surveys were distributed and all were returned. This represented a return rate of 100%. The results of theentire survey are presented in Appendix C. A brief compendium of the questions follows.

In response to the statement " I am confident with the procedures for working the computer," 80% of the intermediate teachers (grade 4, 5,& 6) indicated that they were not confident. Seven of the 10 teachers in this same group responded that they were not familair with the software and its contents. The survey also showed that 7 of

the 10 teachers in this same group used the computer less than once or twice a week. When asked "If your response to item # 3 was less than 2 days per week, please indicate the reason why by checking the appropriate response(s)," a response of 50% or above to all catagories indicated a need. The categories addressed were a schedule of computer distribution cohesive with the instructional schedule, software content fitting into the lesson plans, and the amount of software and hardware available. In the category of "Other (please explain)," 2 of the 10 stated that they did not have enough time for "teaching computers" in their classroom. Three of the 10 stated that only their "brighter" students had the ability to work on the computer.

The survey provided the writer with hard data to support her observation that the computers and software were not being used on a consistent basis. Also, some misconceptions were obvious in reference to what the function of the computer is in the classroom.

The task of integrating the use of computers into the elementary classroom has brought about a nationwide concern as to the preparedness and commitment of educators to this task. Hassett (1984) found that computers, in education, are being purchased more for the presence of the computer in the building rather than with a specific educational goal. The results of a nationwide survey conducted by the Educational Research Services (1982) reported 56.5% of the

responding districts used their computers for "computer assisted instruction" (p.23); however, the process and application of this terminology was inconsistent.

Causative Analysis

The writer saw the causes for the problem of inconsistent and nonconstructive use of the computers coming from several different roots. The most common cause was that teachers' lacked familiarity and confidence in their abilities to work the computer. Many of the teachers were interested in using the computer but did not have the expertise needed.

The lack of familiarity with the software and its content was also a major contributor to the problem. Each teacher needed to know what software was available. The subject area, grade level, and skills that were addressed in each piece of software was pertinent information for its use. Knowledge of the content of the software would help clear up the misconception that the computer is only for "bright" students.

The third cause evolved from the lack of familiarity with the software. The teachers did not know what the software was all about; therefore, they did not realize that it was a tool for instruction rather than another subject to be taught. The varied methods to incorporate the computer

into daily lessons needed to be related to the teachers and principal.

Finally, the fourth cause was the absence of computers being assigned to teachers' classrooms. Computers needed to be available to the teachers for them to be used. This availabilitity needed to be on a consistent basis so that teacher could plan for their use. The failure to establish such a schedule with the teachers was seen by the writer as a main contributor to this cause.

The Related Literature

The massive change that is sweeping the nation, as it enters the age of an information society, is quickly influencing the educational system. The purchase of computers and their uses are one of the major factors causing change. Oettinger (1969) evaluated that much in the very structure of education worked against effective innovation of the computers. He characterized education as rigid, yet fragmented, lacking both centralized authority and genuine flexability. Callison (1985) emphasized the need for school districts to prepare for this massive change even if teachers resist it. However, Willkinson (1983) shed a positive light on the acceptance of computers in the schools when he found that thorough teacher training on computers and the development of confidence in their uses led to an expedient integration

of the computer into the educational setting.

Spencer (1986) reported that the essential aspect of computer use in the classroom was the teacher training and access to the computer. Her report stated that the task facing teachers was not only that they become computer literate but that they become creative about how to use the computers to teach. The selection of software from the abundance at the teachers' disposal was another factor involved in putting the computer to creative use. Schools recognized as being on the leading edge of computer use have gotten there by careful planning, enthusiasm, and determination.

The availability of support personnel was found to be a common factor in successful training and integration of computers in the classroom. Several writers e.g., Olson (1986), Yeloushan (1986), Hunter (1980) and Naiman (1982), suggested the hiring of a computer coordinator or designating a specialist staff person to show the use of the computer and its software and to incorporate computer use in the various subject areas.

Miller (1987) found that the support and participation of key administrators during teacher training facilitated positive attitudes toward the task of integrating the computers in the classroom. She further stated that these various support personnel also contributed to a broader knowledge base of how the computer was used.

Wilkinson (1983) cited another method which was proven to be effective in the teacher training process: the identification of a small number of teachers who were interested in computers and had used them in their classrooms. He stated that given suitable facilities and some release time, these teachers could serve as expert consultants to their fellow teachers, thereby indoctrinating surges of interest and activity.

Interestingly, all of these mentioned methods involved having the novice teacher learn from an expert who is from within the school or school district.

Establishing a support system and training personnel is only the beginning of the teacher training process. The development of a comprehensive and efficient training program is essential. Yeloushan (1986) suggested the key components to be setting specific goals for each training session and separate hardware and software instruction with at least 45 minutes a week to review the concepts presented at the training session. She further stated that this review time should be a time when teachers can give their undivided attention to the task. Lamberic (1984) stated that a computer is so powerful and so flexible that it can become almost whatever one can imagine it to be. He believed that one can not imagine its uses if one has not had ample time to practice.

Olson (1980) reinforced the key components to be those stated above. He added that by having time to become comfortable with the computer, the teacher becomes clearer on the issue of computers as a separate subject and begins to see them as a tool to instruction. Another component that Olson saw as being essential to effective computer training and integration was the participation of the building principal. The information generated in the training sessions is pertinent to the principal's role as educational leader and to his/her responsibilities to the location of building equipment and the physical layout of the building.

The physical placement of the computers was cited to be a common issue in many school districts. Numerous studies (Yeloushan, 1986; Jamison, Suppes & Wells 1974; and Admarel & Swinton 1976) found the most effective use of the computers to be in the classroom. The immediate access and ability to integrate the software content into the lessons were two of the factors which made this location of the computers the most instrumental.

Chambers and Sprecher (1982) recognized two ways computer assisted instruction (CAI) could be used to support instruction -- these were adjunct and primary CAI. Adjucnt CAI is the use of courseware for enrichment or reinforcement of learning that is covered in the regular classroom lessons. Primary CAI is the using the courseware to replace

the regular classroom lesson. Chambers and Sprecher noted adjunct CAI to be the approach which was used more in the elementary educational field. They stated that the use of computers in individual classrooms during the day with students rotating on and off of the computer was a successful method with adjunct CAI.

The authors highlighted various issues in CAI. The setting of specific goals, teacher preparedness, and methods of use were all contributing factors to the success of using computers in the elementary setting. These issues are all common to the practicum setting and relevant to the writer's approach to resolving the problem.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Statement of General Goals

There were three goals for this practicum. The first goal was to help teachers and principal develop an understanding of how to work a personal computer. The second goal was to develop a procedure that provides access to the computer and software for use in the classroom. And the third goal was to develop an awareness of available software and its contents.

Behavioral Expectations

The following behaviors were expected at the end of this practicum:

1. The teachers in grades 4 through 6 and the principal will demonstrate an understanding of how to work a personal computer.
2. A procedure for distributing computers and software will be used by the teachers and principal.
3. The teachers of grades 4 through 6 and principal will have knowledge of the software that is available in their building.

Standards of Performance

The following standards of performance were used to measure behavioral expectations:

1. When presented with a pre and post self evaluation checklist, the teachers and principal will indicate improvement in their understanding and confidence of how to work a personal computer.

2.a. The principal and CAI staff person will establish a computer distribution schedule and assign a computer to each teacher of grades 4 through 6.

b. When presented with a software circulation procedure 7 of the 10 teachers of grades 4 through 6 will have requisitioned software.

3.a. All teachers of grades 4 through 6 and the CAI staff person will have participated in the development of a software catalog.

b. All teachers of grades 4 through 6, the CAI staff person, and the principal will have reviewed the above mentioned catalog of available software.

c. All teachers of grades 4 through 6, CAI staff person, and the principal will have a copy of the catalog.

Assessment Instruments

The following assessment instruments were used to measure the standards of performance:

1. The pre and post self-evaluation checklist (see Appendix D and E) consists of 14 questions regarding the procedures for using the computer. The teachers and principal will respond to each question based on a 4-point scale indicating the statements to be very accurate, accurate, somewhat accurate, or inaccurate.

2.a. The use of the computer will be monitored through oral discussions with each teacher.

b. The CAI staff person will tally and report the teachers' requisitions of software.

3.a. A workshop agenda, post self-evaluation checklist of the wokshops and attendance record will be completed.

b. A workshop agenda, post self-evaluation checklist of the workshops and attendance record will be completed.

c. The receipt of the catalog will be documented by the signature of all teachers of grades 4 through 6, the CAI staff person and the building principal.

4. The writer will keep a log for each component of the practicum. She will summarize the success and failures of each workshop and activity. Major points of the log will appear in dialogue form.

Plans for Analyzing Results

Plans for analyzing the results of this practicum were as folows:

1. The understanding of how to work a computer will be measured by an increase in the number of responses in the very accurate and accurate catagories on the post self-evaluation checklist when compared to the pre self-evaluation checklist.

2.a. The distribution schedule will be included. The monitoring of the computer usage will be presented in dialogue form and in a table using a bar graph.

b. Seven of the 10 teachers of grades 4 through 6 will have requisitioned software by following the procedure established which will be documented on the CAI staff person's tally report.

3.a. Success in meeting the goals and objectives for the workshop will be indicated by 7 of the 10 participants responses being 4 - very successful or 3 - successful on the post self-evaluation checklist.

b. Success in meeting the goals and objectives for the workshop will be indicated by 7 of the 10 participants responses being 4 - very successful or 3 - successful on the post self-evaluation checklist.

c. All teachers of grades 4 through 6, the CAI staff person, the building principal and the district CAI coordinator will have recieved a catalog.

CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Solutions

The purchase of computers has left many school districts with the need to use this equipment effectively. A review of the literature disclosed a number of approaches a school district could take to initiate the use of computers. Teacher training was the common factor in the each review.

One possible approach to maximizing the use of the computers was to place all of the computers in a laboratory setting and train only one teacher. However, Yeloushan (1986) found that this method was not an effective way to integrate the computer as a tool to instruction and have the optimum educational value. The instructional day was interupted and the students worked with the computers only once a week during their scheduled class time.

Spencer's (1986) research found the following method to be most effective, was to have the computers in the individual classroom and train all teachers. The style of training is an in house turn key approach where an expert teacher or CAI coordinator trains the classroom teachers.

Another method proven to be effective in the teacher training process, similar to that of Spencer's, cited by Wilkinson (1983) was the identification of a small number of teachers who are interested in computers and have

used them in their classrooms. He stated that given suitable facilities and some release time, these teachers could serve as expert consultants to their fellow teachers, thereby indoctrinating surges of interest and activity.

The development of a comprehensive and efficient training program is essential as seen by Yeloushan (1986). She suggested the key components to be, setting specific goals for each training session, separate hardware and software instruction with at least 45 minutes a week to review the concepts presented at the training session. She further stated that this review time should be a time when the teachers can give their undivided attention to the task.

The key components of the training have been cited to be several workshop sessions with independent follow up practice and review time (Lamberic, 1984). The workshops should be dedicated to how to work the hardware, how to work the software, and review of the software contents. It was recommended that each of these topics be addressed at a separate workshop.

Description of Selected Solution

The solution to the problem of the teachers not using the computer to suppliment the instruction in their classrooms was based on various components and stategies for teacher training and awareness that were described in earlier sections of this paper. The approach chosen

consists of combining the components and strategies to provide a comprehensive training process.

The strategy selected for training enabled the utilization of the present staff. This staff is a district CAI coordinator, a building CAI staff person, building principal and classroom teachers.

The first component to be addressed was the hardware training. Teachers were given instruction during two in school workshops. The workshop agenda (see Appendix F and G) addressed procedures for working the microcomputer. Practice time was scheduled for the information received during the workshop. This component in the solution strategy was chosen to safe guard against any computerphobia that could be in existence and to develop confidence in using the computer.

The third and fourth workshops (see Appendix H and I) addressed the topic of how to work the microcomputer with software. Instruction on the procedures for loading and running the software on the computer were the focus of the workshop. The successful completion of these two workshops accomplished the first goal.

The second goal was met by the coordinator conducting planning meetings with the building principal and the building CAI staff person. The purpose of the first meeting was be to develop a process for assigning and distributing computers to the classrooms. Establishing a time during

which the software could be circulated was the purpose of the second meeting. The results of the meetings were recorded. The procedures established were explained and written documentation was disseminated at the workshop #6. A simulation of these processes was a part of the agenda.

The development of an awareness of available software and its contents, the third goal, was accomplished during workshop #5 and workshop #6 (see Appendix J and K). These workshops included the review of building software and the documentation of its contents.

The seventh workshop (see Appendix L) was a review of all of the components and the implementation of the newly acquired knowledge and newly developed processes.

During the eighth, ninth, tenth and eleventh week of the implementation process, communication and monitoring meetings (see Appendix M) were held. These meetings addressed any questions that arose or situations that needed attention.

The final week of the practicum addressed the final evalaution of the project.

Report of Action Taken

The solution used in this practicum involved the teachers from one of the elemenatry schools in the school district where the writer is employed. This included 10

teachers of grades 4 through 6. The principal and the CAI staff person for this building were peripherally involved.

The solution strategy began with the writer sending an announcement of computer workshops to the above mentioned teachers. The announcement included a schdule of the days, time and location of the workshops. Copies of the announcment were sent to the Superintendent, Assistant Superintendent of Curriculum and Instruction, the Administative Assistant of Curriculum and Instruction, the Principal and the CAI Staff Person.

The first week of the solution strategy also involved the writer in checking that all computer hardware was in working order, gathering all introductory software disks, the preparation of individual teacher folders and the preparation of a computer distribution schedule.

The second week marked the commencement of the workshops. An administration of a pre self-evaluation checklist was conducted at the beginning of the workshop. The purpose of this checklist was to measure the teachers' perceptions relative to their abilites and knowlegde about computers and the use of computers. The remainder of the worshop was dedicated to the familarization of computer hardware. The participants were introduced to the parts of the computer and how to turn it on and off. Each person was given the opportunity to identify the parts and susbequently power the computer on and off. Practice on plugging and

unplugging the computer to electrical outlets and the engagement of wiring to the various pieces of hardware was carried out.

The writer also announced that she and/or the CAI staff person would be available for practice time after student dismissal on Wednesdays, Thursdays, and Fridays. Each day was set aside for a specific grade level. Wednesdays were for fourth grade teachers, Thursdays for fifth and Fridays were for sixth grade teachers. The teachers went to the room where the workshops were held and practiced what they had learned. The CAI staff person and/or the district coordinator were on hand to answer any questions and give assistance.

The activities of the second workshop were designed to instruct and give the teachers experience in how to work the computer. Each teacher was given a floppy disk. Instructions were then given on the proper disk handling, insertion and removal to the disk drive. The second part of this workshop was instruction and practice on how to start up or "boot" the disk by turning on the various computer parts. The writer observed the teachers carrying out independently the procedures they had been taught during the session.

The participants were given a disk at the onset of the third workshop. They were told to load the disk into the memory of the computer and follow the directions on the

screen. The writer had previously depressed all of the "caps lock" keys on the computer. The purpose for doing this was because this particular program would not respond to input unless this key was depressed. The writer wanted the participants to be successful in running the program the first time and from that point give them the opportunity to see what happened when this key was not depressed.

The second part of this session was dedicated to providing the teachers with another type of software that was in their building. This piece of software required the depression of the return key after each response was typed. Along with exposing the teachers to various types of software the purpose of showing this aspect was a type of trouble shooting lesson. It gave the computer user alternatives to try when the computer was not responding to them. This helps to eliminate the user immediately thinking they broke something or the machine just won't work when they are doing what they thought was correct.

After the teachers had experienced the software mentioned above they were randomly given several pieces of software with similar characteristics. They loaded and ran these programs, all the while making notes of the program name, subject, appropriate grade level and tips for running, such as the "caps lock" key needs to be depressed. These notes were later used in the development of the software catalog.

A computer distribution schedule was handed out at the end of the session (see Appendix O). The schedule took effect the following day allowing the teachers to have a definite time that they had ownership of a computer in their classroom and would have the opportunity to practice what they had learned. They were quite pleased with this announcement and expressed enthusiasm about practing what they had learned.

Management systems within software packages was the topic of the fourth workshop. The participants were introduced to a management system that was resident in one of the pieces of software that they had used in a previous workshop. First, an explanation was given on the capacity of the management system and the kind of data that could be stored and manipiated in the system.

Workshops five and six were conducted in the same manner. The only difference was the subject and content of the software. Workshop five as dedicated to Reading software and six was dedicated to the Math software. Each teacher was given four pieces of software in each subject area. The content, procedures for runnning, and grade level were documented and later used in the development of the software catalog. The areas to be focused on were discussed at the beginning of workshop five. Two programs were chosen at the end of each workshop for review during the practice sessions.

Software circulation procedures were developed and agreed upon during the second part of workshop six.

The seventh workshop was a review of the three process components: (a) computer assignment, (b) software circulation procedures, and (c) selection of software. The teachers gave their input on their experiences with the newly established procedures. They spoke of how well the new procedures were working and that the students were extremely motivated by the computer software. Questions were answered relative to ordering new software.

One day during each of the next four weeks meetings were held to communicate individual experiences and progress in using the computer. These meetings were also used to answer any questions or review any areas of computer usage that was not clear.

Each meeting was prosperous. The first meeting consisted of questions relating to software that the teachers had been using. The next three meetings were sharing postive experiences. The teachers spoke of their individual experiences with their classes, the reactions of the students, and new ideas they had relative to the ways they can use the computer. The writer feels that the support and opportunity to share success stories that these meetings provided was as valuable as the instruction itself.

CHAPTER V

RESULTS, CONCLUSIONS, RECOMMENDATIONS, AND DISSEMINATION

RESULTS

Objective 1 was measured by using a pre and post self-evaluation checklist. The pre and post-checklist and results can be found in Appendices O and P. The objective, understanding of how to work a computer, was measured by an increase in the number of responses in the very accurate and accurate catagories on the post self-evaluation checklist when compared to the pre self-evaluation checklist. Achievement was met by 10 of the 10 teachers participating in the workshops.

The accomplishment of behavioral expectation 2 was evidenced in three different ways. The first evidence was the establishment of the computer distribution chart. The second evidence was the usage of the computer which was verified through the observations of the building principal, the district coordinator and the CAI staff person. A bar graph (see Appendix Q) shows the average hours of usage per day. The writer as district coordinator, visited the classrooms twice a week throughout the last 5 weeks of the practicum process. During this time, she spoke with the teachers about and made observations of the amount of time during the day that the computer was being used. Each time a visit was made, she found the students either working on the computer or preparing to begin to work on it. A means

to this end, computer usage, was the aquisition of the software. The procedure and documentation can be found in Appendix R.

Behavioral expectation 3 was accomplished through the workshop activities and the distribution of the software catalog. The results of the post-evaluation checklist indicated that this goal had been met in that 7 of 10 participant responses (4 - very successful or 3 - successful) was exceeded. Appendix S shows the receipt of the software catalog by each teacher, the CAI staff person and the building principal.

Attendance at the workshops and meetings was an important part of the process. The attendance record (see Appendix T) evidences the excellent participation. This factor was key to the success in information dessemination and consistency. The practice time helped the one teacher, who was absent for two session stay current with the others.

A log was kept by the writer throughout the entire practicum implementation. Following is a summary of that log.

The participants welcomed the workshops and the opportunity to have a specific time set aside for the instruction and follow-up practice on the computer. An evaluation statement was presented at the close of each workshop. The responses from these statements indicated that the participants agreed or strongly agreed that the

workshop objectives had been met. Appendix U documents these results.

By the end of the fifth workshop the teachers expressed a strong interest in having more input than in the past in the selection and ordering of instructional software. The writer took their interest as a valuable asset and responded by acquiring software catalogs and ordering information for each teacher. A conference was also held between the writer and the principal which resulted in the principal's inclusion of the teachers' input in his 1988-89 software requisition.

The Communication and Monitoring meetings which were held weekly from the eighth through twelfth week inclusive were quite informative. Each teacher shared their experiences in using the computer.

One sixth grade teacher found success in using a typically unmotivated, underachiever in her classroom to be the manager/caretaker of the software and computer while it was in her class. The child's duties required him to read and catagorize the software names. This duty in itself was learning and self esteem building experience.

Questions came up relative to safely of the disks in the classrooms that were extremely hot. The teachers were assured that the disks would be safe as long as they were not stored near the heater or on top of the heater.

The CAI staff person reported that she had an improved communication with the teachers as a result of the software catalog.

Questions at the meetings were at a minimum and the majority of the time was spent sharing of positive experiences.

Conclusions

The first behavioral expectation addressed the participants' demonstration of their understanding of how to work a personal computer. It was quite obvious that this expectation was met by the end of the third workshop. The workshop objectives were approached in a very slow and thorough manner. The objectives per workshop were designed to require as little material or process as possible to be remembered at a given seating. They were also designed for mastery and accomplishment to be met by the end of each workshop.

The results that evolved from the above mentioned approach support the Wilkinson's (1983) view. Wilkinson found teachers to accept, integrate and be confident in the use of computers when a thorough well paced training was presented.

Spencer also believed that training as well as access to the computer were essential to develop teacher use. The second expectation, the establishment of a procedure for

distributing computer and software, was successfully met and supported Spencers beliefs stated above. The distribution schedule was handed out after the second workshop and the software circulation procedures were initiated after the sixth workshop. The issue of access to the computer and support personnel who were available during practice time during the week, in the writer's opinion, was a key aspect in meeting the goals of the practicum. Yeloushan (1986) specifically addressed the need for practice time and time to become familiar with software. Rose (1982) supported the issues of access and distribution. He supported not only the necessity of teacher access but also student access and equal distribution for equal education opportunity.

The third behavioral expectation addressing participants' knowledge of the software that is available in the building was met by the end of the sixth workshop. This component of the workshops was a welcomed activity and also brought about some interest by the teachers to have a part in the software selection process. Yeloushan also urges teacherinput in the selection processes.

In conclusion, this practicum project proved that thorough teacher training does improve the consistency in which teachers use computers to suppliment instruction. The writer is extremely pleased with the results of the practicum. This practicum experience has laid a ground work

for further developing the use use of computers in the educational setting and resolving problems that might arise.

Recommendations

The writer has three recommendations. First, the use of computers should be supported by the building principal. Second, the support of the building principal should be in the form of willingness to alot time for training and daily maintenance of the program. These recommendations come from the writer's experience during this practicum. Without the principal's encouragement and support of the teachers in this endeaver the trainging and computer use would have been quite difficult.

The third recommendation is that all teachers should have an opportunity to have input in the requisitioning of new software for the curriculum.

Dissemination

The results of this practicum project were shared in two ways. The first way was by presentation to a group of the districts CAI staff persons. A discussion was held regarding the content of the practicum and the copy was reviewed.

A copy was also shared with an educator in the field of computers from a school district in the writer's state.

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APPENDIX A

FACULTY SURVEY

Appendix A
Faculty Survey

Your teaching grade level(s) _____

DIRECTIONS: Circle your response for each of the following statements.

4 = This a very accurate statement.
3 = This is an accurate statement.
2 = This statement is somewhat accurate.
1 = This statement is inaccurate.

1. I am confident with the procedures for working computer?
4 3 2 1

2. I am familiar with the software that is in my building and its content?
4 3 2 1

3. I use the computer in my classroom
__ a. everyday
__ b. 2-4 days/week
__ c. 1-2 days/week
__ d. 3 days/month or less

4. If your response was less than two days/week please indicate the reason(s) why by checking the appropriate response(s).

__ a. schedule of distribution was not cohesive with my instructional schedule

__ b. couldn't fit software content into lesson plans

__ c. not enough software

__ d. not enough computers

__ e. Other (please explain)

_____

APPENDIX B

LETTER FROM PRINCIPAL

Appendix B

Letter From Principal

Dear Ms. Vitchoff,

As we discussed, while you were visiting our school, the staff could benifit from additional training on the computer.

My staff and I are interested in arranging a series of workshops with you. I would appreciate you developing a schedule at your convienece.

Thank you for your cooperation.

APPENDIX C

RESULTS OF FACULTY SURVEY

Appendix C

Results of Faculty Survey

20 teachers were surveyed
20 surveys were returned (100%)
10 teachers of Kindergarten through Grade 3
10 teachers of Grades 4 through 6

(1) I am confident with the procedures for working the computer.

Grades 4, 5 & 6	K, 1, 2 & 3
4 - 0 - 0%	4 - 1 - 10%
3 - 1 - 10%	3 - 2 - 20%
2 - 1 - 10%	2 - 3 - 30%
1 - 8 - 80%	1 - 4 - 40%

(2) I am familiar with the software in my building and its contents.

Grades 4, 5 & 6	K, 1, 2 & 3
4 - 1 - 10%	4 - 2 - 20%
3 - 1 - 10%	3 - 1 - 10%
2 - 1 - 10%	2 - 3 - 30%
1 - 7 - 70%	1 - 4 - 40%

(3) I use the computer in my classroom.

Grades 4, 5 & 6	K, 1, 2 & 3
a - 1 - 10%	a - 2 - 20%
b - 2 - 20%	b - 1 - 10%
c - 4 - 40%	c - 4 - 40%
d - 3 - 30%	d - 3 - 30%

(4) Reasons for responding to item "c" or "d".

Grades 4, 5 & 6	K, 1, 2 & 3
a - 5 - 50%	a - 6 - 60%
b - 6 - 60%	b - 1 - 10%
c - 5 - 50%	c - 1 - 10%
d - 5 - 50%	d - 5 - 50%
e - 2 - 20%	e - 0 - 0%

APPENDIX D

PRE SELF-EVALUATION CHECKLIST

Appendix D

Pre Self-Evaluation Checklist

Name _____ Date _____
Grade presently teaching __

4 = This is a very accurate statement.
3 = This is an accurate statement.
2 = This is a somewhat accurate statement.
1 = This is an inaccurate statement.

1. I know how to turn the computer on and off.

4 3 2 1

2. I know how to load a disk.

4 3 2 1

3. I know how to use the printer.

4 3 2 1

4. I am confident with the procedure for working he computer.

4 3 2 1

5. I am aware of the computer software that is available in the school.

4 3 2 1

6. I know how to run the software that is in the school

4 3 2 1

7. I know how to gain entry into the management systems that accompany the building software.

4 3 2 1

8. I know how to enter data into the management systems accompanying the building software.

4 3 2 1

9. I know how to run the reports from the above mentioned management system.

4 3 2 1

10. I am aware of the Reading software available as a supplement to classroom instruction.

4 3 2 1

11. I am aware of the Math software available as a supplement to classroom instruction.

4 3 2 1

12. I have received a catalog of the software available for use in my classroom.

4 3 2 1

13. I have a computer assigned to my classroom.

4 3 2 1

14. I feel I am adequately prepared to use the computer as a supplemental tool to instruction.

4 3 2 1

Signature _____ Date _____

APPENDIX E

POST SELF-EVALUATION CHECKLIST

Appendix E

Post Self-Evaluation Checklist

Name _____ Date _____
Grade presently teaching __

4 = This is a very accurate statement.
3 = This is an accurate statement.
2 = This is a somewhat accurate statement.
1 = This is an inaccurate statement.

1. I know how to turn the computer on and off.

4 3 2 1

2. I know how to load a disk.

4 3 2 1

3. I know how to use the printer.

4 3 2 1

4. I am confident with the procedure for working he computer.

4 3 2 1

5. I am aware of the computer software that is available in the school.

4 3 2 1

6. I know how to run the software that is in the school

4 3 2 1

7. I know how to gain entry into the management systems that accompany the building software.

4 3 2 1

8. I know how to enter data into the management systems accompanying the building software.

4 3 2 1

9. I know how to run the reports from the above mentioned management system.

4 3 2 1

10. I am aware of the Reading software available as a supplement to classroom instruction.

4 3 2 1

11. I am aware of the Math software available as a supplement to classroom instruction.

4 3 2 1

12. I have received a catalog of the software available for use in my classroom.

4 3 2 1

13. I have a computer assigned to my classroom.

4 3 2 1

14. I feel I am adequately prepared to use the computer as a supplemental tool to instruction.

4 3 2 1

Signature _____ Date _____

APPENDIX F

AGENDA
WORKSHOP #1

Appendix F

AGENDA
WORKSHOP #1
Hardware Training

Goal
To develop an understanding of the parts of the computer

Objectives
By the end of the workshop each participant will identify the parts of the computer.
By the end of the workshop each participant will identify the location of the on and off switches
By the end of the workshop each participant will identify the electrical plugs that are attached to the computer parts

1. Pre Self-Evaluation Checklist

2. Identification of Computer Parts

3. Location of On and Off Switches

4. Identification of Electrical Plugs

APPENDIX G

AGENDA
WORKSHOP #2

Appendix G

AGENDA
WORKSHOP #2

Goal
To develop an understanding of how to work the computer

Objectives
By the end of the workshop each participant will identify how to handle a floppy disk.
By the end of the workshop each participant will identify how to put a disk in the disk drive.
By the end of the workshop each participant will identify how to turn the computer, monitor and printer on and off.
By the end of the workshop the participants will know when it is safe to insert and remove a disk into the disk drive.

1. Disk Handling

2. Insert Disk into Disk Drive

3. Turning Computer On
   CPU
   Monitor
   Printer

4. Rules for Inserting and Removing a Disk

APPENDIX H

AGENDA
WORKSHOP #3

Appendix H

AGENDA
WORKSHOP #3
Software Running

Goal
To develop an understanding of how to run various types of instructional software.

Objectives
By the end of the workshop each participant will identify how to run a computer program that requires the "caps lock" key to be depressed in order for it to run.
By the end of the workshop each participant will identify how to run a program that requires the use of the return key after each input.

1. Caps Lock Program

2. Return Key Input

3. Documentation of Program Name, Subject and Tips for Running the Programs from Items # 1 & 2

4. Computer Distribution Schedule

APPENDIX I

AGENDA
WORKSHOP #4

Appendix I

AGENDA
WORKSHOP #4
Running Computer Software

Goal
To develop an understanding of software management systems

Objectives
By the end of the workshop each participant will identify how to get in and out of a management system.
By the end of the workshop each participant will identify how to input data into the management system.

1. Control Keys for Entry to Management System
   Reference Manual
2. Control Keys for Exiting Management System
   Reference Manual
3. Input Classroom Data
   Reference Manual

APPENDIX J

AGENDA
WORKSHOP #5

Appendix J

AGENDA
WORKSHOP #5
Software Preview and Documentation

Goal
To develop an awarness of available Reading software and its contents

Objective
By the end of the workshop the participants will have previewed and documented four pieces of Reading software

1. Present Documentation Procedures

2. Preview Software

3. Choose two pieces of Reading software for preview during practice session.

APPENDIX K

AGENDA
WORKSHOP #6

Appendix K

AGENDA
WORKSHOP #6
Software Preview and Documentation

Goal
To develop an awareness of available Math software and its contents

Objective
By the end of the workshop the participants will have previewed and documented four pieces of Math software

1. Preview Software

2. Choose two pieces of Math software for preview during practice session.

3. Software Circulation Procedures

APPENDIX L

AGENDA
WORKSHOP #7

Appendix L

AGENDA
WORKSHOP #7
Review

1. Computer Assignment

2. Software Circulation

3. Selection of Software

APPENDIX M

ANNOUNCEMENTS
COMMUNICATION AND MONITORING MEETINGS

Appendix M

Announcements
Communication and Monitoring Meetings

To: Principal, CAI Staff Person and Teachers of Grades 4 through 6
From: CAI Coordinator
Date: February 1, 1988
Subject: Communication and Monitoring Meetings

There will be a weekly meeting to share your experiences and progress in using the computer. Also, any questions that should arise will be addressed.

Looking forward to seeing you.

Dates: February 2, 11, 18 & 25, 1988
Time: 3:00 PM
Location: Library

APPENDIX N

PRE SELF-EVALUATION CHECKLIST
RESULTS

Appendix N

Pre Self-Evaluation Checklist Results

4 = This is a very accurate statement.
3 = This is an accurate statement.
2 = This is a somewhat accurate statement.
1 = This is an inaccurate statement.

1. I know how to turn the computer on and off.

Responses
4 - 0
3 - 0
2 - 5
1 - 5

2. I know how to load a disk.

Responses
4 - 0
3 - 0
2 - 4
1 - 6

3. I know how to use the printer.

Responses
4 - 0
3 - 0
2 - 3
1 - 7

4. I am confident with the procedure for working he computer.

Responses
4 - 0
3 - 0
2 - 1
1 - 9

5. I am aware of the computer software that is available in the school.

Responses
4 - 0
3 - 1
2 - 1
1 - 8

6. I know how to run the software that is in the school.

Responses
4 - 0
3 - 1
2 - 1
1 - 8

7. I know how to gain entry into the management systems that accompany the building software.

Responses
4 - 0
3 - 0
2 - 0
1 - 10

8. I know how to enter data into the management systems accompanying the building software.

Responses
4 - 0
3 - 0
2 - 0
1 - 10

9. I know how to run the reports from the above mentioned management system.

Responses
4 - 0
3 - 0
2 - 0
1 - 10

10. I am aware of the Reading software available as a supplement to classroom instruction.

Responses
4 - 0
3 - 1
2 - 1
1 - 1

11. I am aware of the Math software available as a supplement to classroom instruction.

Responses
4 - 0
3 - 1
2 - 1
1 - 8

12. I have received a catalog of the software available for use in my classroom.

Responses
4 - 0
3 - 0
2 - 0
1 - 10

13. I have a computer assigned to my classroom.

Responses
4 - 0
3 - 0
2 - 0
1 - 10

14. I feel I am adequately prepared to use the computer as a supplemental tool to instruction.

Responses
4 - 0
3 - 0
2 - 1
1 - 9

APPENDIX O

COMPUTER DISTRIBUTION

Appendix O

COMPUTER DISTRIBUTION SCHEDULE

Room # 11	M - W - F (AM)	T & TH (PM)	Computer #405
Room # 15	T & TH (AM)	M - W - F (PM)	" #405
Room # 18	"	"	" #133
Room # 19	M - W - F (AM)	T & TH (PM)	" #133
Room # 22	T & TH (AM)	M - W - F (PM)	" #303
Room # 25	M - W - F (AM)	T & TH (PM)	" #303
Room # 29	"	"	" #135
Room # 30	T & TH (AM)	M - W - F (PM)	" #135
Room # 34	"	"	" #409
Room # 35	M - W - F (AM)	T & TH (PM)	" #409
Principal	M - T - W - TH - F (AM & PM)		" #408
CAI Staff	M - T - W - TH - F (AM & PM)		" #406

APPENDIX P

POST SELF-EVALUATION CHECKLIST RESULTS

Appendix P

Post Self-Evaluation Checklist Results

4 = This is a very accurate statement.
3 = This is an accurate statement.
2 = This is a somewhat accurate statement.
1 = This is an inaccurate statement.

1. I know how to turn the computer on and off.

Responses
4 - 10
3 - 0
2 - 0
1 - 0

2. I know how to load a disk.

Responses
4 - 10
3 - 0
2 - 0
1 - 0

3. I know how to use the printer.

Responses
4 - 10
3 - 0
2 - 0
1 - 0

4. I am confident with the procedure for working he computer.

Responses
4 - 10
3 - 0
2 - 0
1 - 0

5. I am aware of the computer software that is available in the school.

Responses
4 - 3
3 - 7
2 - 0
1 - 0

6. I know how to run the software that is in the school.

Responses
4 - 8
3 - 2
2 - 0
1 - 0

7. I know how to gain entry into the management systems that accompany the building software.

Responses
4 - 8
3 - 2
2 - 0
1 - 0

8. I know how to enter data into the management systems accompanying the building software.

Responses
4 - 7
3 - 3
2 - 0
1 - 0

9. I know how to run the reports from the above mentioned management system.

Responses
4 - 7
3 - 3
2 - 0
1 - 0

10. I am aware of the Reading software available as a supplement to classroom instruction.

Responses
4 - 8
3 - 2
2 - 0
1 - 0

11. I am aware of the Math software available as a supplement to classroom instruction.

Responses
4 - 8
3 - 2
2 - 0
1 - 0

12. I have received a catalog of the software available for use in my classroom.

Responses
4 - 10
3 - 0
2 - 0
1 - 0

13. I have a computer assigned to my classroom.

Responses
4 - 10
3 - 0
2 - 0
1 - 0

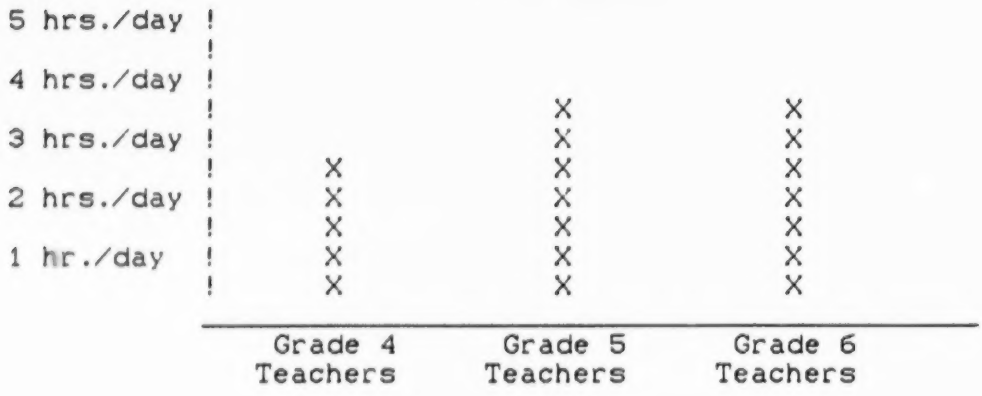
14. I feel I am adequately prepared to use the computer as a supplemental tool to instruction.

Responses
4 - 10
3 - 0
2 - 0
1 - 0

APPENDIX O

BAR GRAPH
COMPUTER USAGE

Appendix Q
Bar Graph
Computer Usage



The bar graph shows the average amount of hours per day that the computer was used. The numbers were derived from one week of monitoring by the principal, CAI staff person and the coordinator along with discussions with the teachers.

APPENDIX R

SOFTWARE REQUISITION TALLY
AND
PROCEDURE

Appendix R

Software Requisition Tally and Procedure

The number in the box indicats the number of times during that week that the teacher requisitioned software following the established procedures.

Room #	2/1	2/8	2/15	2/22	2/29		
11	4 /	3 /	4 /	4 /	4 /	/	/
15	5 /	4 /	5 /	5 /	5 /	/	/
18	4 /	4 /	4 /	4 /	4 /	/	/
19	4 /	4 /	4 /	4 /	4 /	/	/
22	4 /	4 /	4 /	4 /	4 /	/	/
25	4 /	4 /	4 /	4 /	4 /	/	/
29	5 /	5 /	5 /	5 /	5 /	/	/
30	5 /	5 /	5 /	5 /	5 /	/	/
34	4 /	4 /	4 /	4 /	4 /	/	/
35	4 /	4 /	5 /	5 /	4 /	/	/

The procedure for requisitioning software is as follows:

Requistion and Return Hours Daily
8:30AM - 8:45AM and 3:00PM - 3:30PM

1. All software in shelved in alphabetical order according to title and is catagorized by subject.
2. Remove the card from the cardpocket, sign your name and room number, wait for the card to be stamped by the CAI staff person.
3. If you would like to use the software for more than two days please indicate this in writing to the CAI staff person.
4. Please return all software to the "Return Table". It would be a tremendous help if you would stack it in its appropriate place alphabetically.

THANK YOU FOR YOUR CONTINUED COOPERATION !!

APPENDIX S

DOCUMENTATION OF RECEIPT OF SOFTWARE CATALOG

Appendix S
Documentation of Receipt of Software Catalog

Please initial next to your room number if you have recieved a software catalog.

Room # 11 _____
Room # 15 _____
Room # 18 _____
Room # 19 _____
Room # 22 _____
Room # 25 _____
Room # 29 _____
Room # 30 _____
Room # 34 _____
Room # 35 _____
Principal _____
CAI Staff _____

APPENDIX T

WORKSHOP AND MEETING ATTENDANCE SHEET

Appendix T

Workshop and Meeting Attendance Sheet

Please place your initials in the box next to your room number indicating your attendance at the above dated workshop.

	Workshop Dates					
Room #	12/8	12/15	1/5	1/12	1/19	1/26
11	/	/	/	/	/	/
15	/	/	/	/	/	/
18	/	/	/	/	/	/
19	/	/	/	/	/	/
22	/	/	/	/	/	/
25	/	/	/	/	/	/
29	/	/	/	/	/	/
30	/	/	/	/	/	/
34	/	/	/	/	/	/
35	/	/	/	/	/	/

	Meeting Dates					
Room #	2/2	2/11	2/18	2/25		
11	/	/	/	/	/	/
15	/	/	/	/	/	/
18	/	/	/	/	/	/
19	/	/	/	/	/	/
22	/	/	/	/	/	/
25	/	/	/	/	/	/
29	/	/	/	/	/	/
30	/	/	/	/	/	/
34	/	/	/	/	/	/
35	/	/	/	/	/	/

APPENDIX U

RESULTS OF INDIVIDUAL WORKSHOP EVALUATION STATEMENTS

Appendix U
Results of Individual Workshop Evaluation Statements

4 = This is a very accurate statement.
3 = This is an accurate statement.
2 = This is a somewhat accurate statement.
1 = This is an inaccurate statement.

Workshop 1

Responses
4 - 8
3 - 2
2 - 0
1 - 0

Workshop 2

Responses
4 - 8
3 - 2
2 - 0
1 - 0

Workshop 3

Responses
4 - 10
3 - 0
2 - 0
1 - 0

Workshop 4

Responses
4 - 10
3 - 0
2 - 0
1 - 0

Workshop 5

Responses
4 - 10
3 - 0
2 - 0
1 - 0

Workshop 6

Responses
4 - 10
3 - 0
2 - 0
1 - 0